Message

From: White, Paul [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4E179825823C44EBBB07A9704E1E5D16-WHITE, PAUL]

Sent: 7/8/2014 6:35:31 PM

To: Flowers, Lynn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1a4411c874d041b9a8badfc32b91bd70-Flowers, Lynn]; Deener, Kathleen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b9a2ff1c086249ea8f6414afde8a5e54-Deener, Kathleen]; D'Amico, Louis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=78a91f83c4414910be286efe02004dbc-D'Amico, Louis J.]; Berner, Ted [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f1949c9653024d3cb4aa4c2bd69c4fde-Berner, Ted]; Birchfield, Norman [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c910f2fd28414e819b6afe6dda525e9f-Birchfield, Norman]; Vandenberg, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dcae2b98a04540fb8d099f9d4dead690-Vandenberg, John]; Walsh, Debra [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d4fd965338fc4d449c2954945c41de46-Walsh, Debra]; Bussard, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cf26b876393e44f38bdd06db02dbbfe5-Bussard, David]; Gatchett, Annette [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f12d699a71f84e21bddbb876dae7f96c-Gatchett, Annette]; Troyer, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=847b0020dd0e457e85f994a1ad64b26d-Troyer, Michael]; Hawkins, Belinda [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=075561d171e845828ec67a945663a8e6-Hawkins, Belinda]; Olden, Kenneth [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8979224c77ea4d559f70cab1688f28aa-Olden, Kenneth]; Jones, Samantha [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eac77fe3b20c4667b8c534c90c15a830-Jones, Samantha]; Perovich, Gina [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6e3c19d7f4db41bfa2477aa27ad83945-Perovich, Gina]; Cogliano, Vincent [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=51f2736376ac4d32bad2fe7cfef2886b-Cogliano, Vincent]; Chiu, Weihsueh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9895659b6eb34dcabe92d46ca7b3b2f7-Chiu, Wuehsueh]; Strong, Jamie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea753aafefb74c268550fe6a2c187838-Benedict, Jamie]; Rieth, Susan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=00aac63cc995489188b8a449aaa18f5e-Rieth, Susan]; Ross, Mary [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=98359cd1f66f46ec91d327e99a3c6909-Ross, Mary]; Sonawane, Bob [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a30dc04805854452837bcabc6b2954ab-Sonawane, Bob]; Scott, Cheryl [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fadc62fbfa40409d837b3d1e1fdbcc11-Scott, Cheryl]; Sams, Reeder [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d5b479ccd894cea99ae55df20de6971-Sams, Reeder]; Burgoon, Lyle [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fcec79fdcce947348d1a387abb06d727-Burgoon, Lyle]; Dutton, Steven [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=795a1526feec425f8be0b3f5c0a671c6-Dutton, Steve]; Lee, Janice [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5d72226848849279376f33f6d0b9845-Lee, Janice]; Cowden, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=4cccc2629cb043e0901c6b5f61344e9c-Cowden, John]

Subject: RE: Today's NIEHS Arsenic Press Release: Low doses of arsenic cause cancer in male mice

This is a rather striking finding. Pervious rodent studies have had difficulty detecting carcinogenic effects of inorganic arsenic. Here with exposure to arsenic in drinking water starting during the mothers pregnancy, mice develop substantial excess of lung tumors at the lowest test dose of 50ppb in drinking water. With response flat between 50 and 500ppb and then falling off at 5000 ppb. Which may also suggest phenomenon whereby previous higher dose rodent studies did not see effects. Of course 50 ppb was EPA's old drinking water standard for arsenic – which has now been lowered to 5 ppb due to arsenic lung cancer and bladder cancer findings in humans.

From: Flowers, Lynn
Sent: Tuesday, July 08, 2014 12:45 PM
To: Deener, Kathleen; D'Amico, Louis; Berner, Ted; Birchfield, Norman; Vandenberg, John; Walsh, Debra; Bussard, David; Gatchett, Annette; Troyer, Michael; Hawkins, Belinda; Olden, Kenneth; Jones, Samantha; Perovich, Gina; Cogliano, Vincent; Chiu, Weihsueh; Strong, Jamie; Rieth, Susan; Ross, Mary; Sonawane, Bob; Scott, Cheryl; White, Paul; Sams, Reeder; Burgoon, Lyle; Dutton, Steven; Lee, Janice; Cowden, John
Subject: Today's NIEHS Arsenic Press Release: Low doses of arsenic cause cancer in male mice

The paper is attached....

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From: Zenick, Hal
Sent: Tuesday, July 08, 2014 10:36 AM
To: Axelrad, Daniel; Baugh, Thomas L; Beringer, Mike; Doyle, Elizabeth; Firestone, Michael; Flowers, Lynn; Grams, Bradley; Hamernik, Karen; Hillger, Robert; Keteles, Kristen; Klevs, Mardi; Landy, Ronald; McQueen, Charlene; Morton, Michael; Ohanian, Edward; Olsen, Marian; Pagan, Ines; Raffaele, Kathleen; Stifelman, Marc; Wilson, Patrick
Subject: Arsenic Press Release: Low doses of arsenic cause cancer in male mice

FYI

From: NIEHS News Releases [mailto:NIEHS_NEWS_RELEASES@LIST.NIH.GOV] **On Behalf Of** NIEHS OCPL Announcements
Sent: Tuesday, July 08, 2014 8:54 AM
To: NIEHS_NEWS_RELEASES@LIST.NIH.GOV
Subject: Press Release: Low doses of arsenic cause cancer in male mice

Low doses of arsenic cause cancer in male mice

Mice exposed to low doses of arsenic in drinking water, similar to what some people might consume, developed lung cancer, researchers at the National Institutes of Health have found.

Arsenic levels in public drinking water cannot exceed 10 parts per billion (ppb), which is the standard set by the U.S. Environmental Protection Agency. However, there are no established standards for private wells, from which millions of people get their drinking water.

In this study, the concentrations given to the mice in their drinking water were 50 parts per billion (ppb), 500 ppb, and 5,000 ppb. 50 ppb is the lowest concentration that has been tested in an animal study, and researchers say that because of differing rates of metabolism, mice need to be exposed to greater concentrations of arsenic in drinking water than humans to achieve the same biological dose and similar health effects.

The researchers used a model that duplicates how humans are exposed to arsenic throughout their entire lifetime. In the study, the mice were given arsenic three weeks before breeding and throughout pregnancy and lactation. Arsenic was then given to the offspring after weaning, and all through adulthood at concentrations relevant to human exposure. The researchers looked at the tumors in the adult offspring.

"This is the first study to show tumor development in animals exposed to very low levels of arsenic, levels similar to which humans might be exposed," said Michael Waalkes, Ph.D., lead author on the paper and director of the National Toxicology Program (NTP) Laboratory. "The results are unexpected and certainly give cause for concern."

Arsenic is present in the environment as a naturally occurring substance or due to contamination from human activity. Arsenic may be found in many foods, including grains, fruits, and vegetables, where it is present due to absorption from the soil and water. This study focused on inorganic arsenic, which often occurs in excess in the drinking water of millions of people worldwide, and has been previously shown to be a human carcinogen.

In the study, more than half of the male offspring mice developed significant increases in benign and malignant lung tumors at the two lower doses (50 ppb and 500 ppb). Female offspring also developed benign tumors at the lower concentrations. Interestingly, the researchers did not find significant increases in lung tumors in either sex at the highest dose (5,000 ppb).

"Although this is only one study, it adds to a growing body of evidence showing adverse health effects from very low exposures to arsenic, raising the possibility that no level of arsenic appears to be safe," said Linda Birnbaum, Ph.D, director of the National Institute of Environmental Health Sciences (NIEHS) and NTP.

The paper from the NTP Laboratory at NIEHS, part of NIH, appears in the Archives of Toxicology.

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NTP is a federal, interagency program, headquartered at the NIEHS, whose goal is to safeguard the public by identifying substances in the environment that may affect human health. For more information about NTP and its programs, visit http://ntp.niehs.nih.gov/

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Reference: Waalkes MP, Qu W, Tokar EJ, Kissling G, Dixon D. 2014. Lung tumors in mice induced by "whole life" inorganic arsenic exposure at human relevant doses. Arch Toxicol; doi:10.1007/s00204-014-1305-8.

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